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Measures to Strengthen International Co-operation in Nuclear, Radiation and Transport Safety and Waste Management

Report by the Director General

Purpose

The purpose of this document is to submit to the Board of Governors and the General Conference, for their information, reports on:

- the safety of transport of radioactive material (Annex 1);
- radiological criteria for long-lived radionuclides in commodities (Annex 2);
- education and training in nuclear, radiation and transport safety and waste management (Annex 3);
- international response to nuclear and radiological emergencies (Annex 4);
- the safety standards programme (Annex 5);
- the safety of research reactors (Annex 6);
- the safety of radioactive waste management (Annex 7);
- the safe decommissioning of nuclear activities (Annex 8); and
- the radiological protection of patients (Annex 9).

Safety of Transport of Radioactive Material

BACKGROUND

1. In September 2002, in resolution GC(46)/RES/9.B, the General Conference formulated its position on a number of issues relevant to the safety of transport of radioactive material including actions to be taken by Member States in this regard, and tasked the Secretariat to implement a number of actions. It requested the Director General to report to the 47th General Conference in 2003 on the implementation of this resolution.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2002 SESSION

Optimizing measures and international regulations relevant to international maritime transport

2. The Secretariat continued to work closely with the International Maritime Organization (IMO), which is preparing to issue new emergency response guides that incorporate detailed inputs provided by the Secretariat. IMO, which has made the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (the INF Code) mandatory for its Member States, is now in the process of making most of the International Maritime Dangerous Goods Code (the IMDG Code, which incorporates all the requirements of the Agency's Transport Regulations) mandatory for them.

Reviews of the Agency's Transport Regulations

3. The Secretariat initiated the second two-year review of the Agency's Transport Regulations early in 2002, with a request for proposals for changes to the Transport Regulations, to be considered by a revision panel. Approximately 200 proposals were received. The revision panel considered those proposals in September 2002 and made recommendations on them that were considered by TRANSSC in February 2003. The Secretariat placed the proposals provisionally accepted by TRANSSC on an Agency website for 120-day review by Member States. The revision panel will in November 2003 consider Member States' comments and determine the changes to be made to the Transport Regulations, for approval by the Board.

TranSAS missions

4. A TranSAS mission to Turkey took place from 3 to 14 March 2003 and one to Panama took place from 9 to 20 June 2003. Reports on those missions will be issued as soon as possible. The report on the TranSAS mission to Brazil in April 2002 will be issued soon. The Secretariat has received a request for a TranSAS mission to France, the pre-mission for which took place in May 2003.

5. With regard to the request that the Secretariat "ascertain whether there are available spare resources to satisfy further requests for TranSAS missions from developing Member States", such missions can - as stated last year in document GOV/2002/35-GC(46)/11 - be financed from technical co-operation resources if they are requested as high-priority components of the requesting countries' national programmes of technical co-operation with the Agency. The financial resources for TranSAS missions to other Member States must continue to be provided by those Member States.

The EVTRAM database

6. With the assistance of the Swedish Government, the Secretariat has developed a data input programme that Member States can use in preparing data for the database on Events in the Transport of Radioactive Material (EVTRAM). The data input programme can be downloaded from the following website:

www.amckonsult.se

7. In a circular letter dated 3 April 2003, the Secretariat invited all Member States to provide the names and contact details of the persons who are authorized to submit information on transport events to the EVTRAM system on behalf of their governments. Only 21% of Member States have so far provided the requested information. As a next step, the Secretariat will work with Member States' contact points in obtaining information for the EVTRAM system.

Information on how Member States regulate transport

8. In 2002, the Agency's transport safety web page carried inputs from 43 Member States on how they regulate the transport of radioactive material. In January 2003, the Secretariat again requested Member States to provide inputs (or updated inputs). Currently, the web page carries data from 53 Member States (out of 135), based on inputs received in 2001, 2002 and 2003.

Education and training

9. The Secretariat has published (as Training Course Series No. 1) the third edition of *Safe Transport of Radioactive Material*, the reference material used for its international training courses. The publication has a CD-ROM insert that contains visual aids for training courses for competent authorities, consignors and carriers, and emergency first responders. There are also visual aids that give an overview of the requirements of the Agency's Transport Regulations and explain the differences between the latest edition and previous editions of the Transport Regulations. The training material has been sent to all designated competent authorities responsible for approvals in the area of radioactive material transport. The reference material can also be used for national training courses.

10. In 2003, because of a shortage of financial resources for technical co-operation, the Secretariat is not offering any training in transport safety. However, it plans to hold training

courses in West Asia and the East Asia and Pacific region in 2004. Thereafter, subject to the availability of financial resources, the Secretariat plans to hold a training course on transport safety in each of the five technical co-operation regions every two or three years.

INTERNATIONAL CONFERENCE ON THE SAFETY OF TRANSPORT OF RADIOACTIVE MATERIAL

11. The International Conference on the Safety of Transport of Radioactive Material took place at the Austria Center Vienna from 7 to 11 July 2003. The Conference was organized by the Agency in co-sponsorship with the International Civil Aviation Organization (ICAO), IMO and the Universal Postal Union (UPU), and in co-operation with the International Air Transport Association (IATA) and the International Organization for Standardization (ISO).

12. 534 participants from 82 Member States and 14 organizations were nominated to participate in the Conference.

13. The "Summary and Findings of the Conference President" have been posted on the Agency website

http://www-rasanet.iaea.org/programme/radiation-safety/trans-safety.htm

under Documents and Publications.

Radiological Criteria for Long-Lived Radionuclides in Commodities

BACKGROUND

1. In September 2000, in resolution GC(44)/RES/15, the General Conference requested the Secretariat to develop, during the next two years and within available resources, radiological criteria for long-lived radionuclides in commodities, particularly foodstuffs and wood, and to submit them to the Board of Governors for approval. Moreover, the Secretariat was requested to accomplish this task by using the Agency's radiation protection advisory mechanisms and in collaboration with the competent organs of the United Nations and with the specialized agencies concerned.

2. On 10 September 2001, the Board, which had before it, in document GOV/2001/29-GC(45)/12, a report on the status of the work being done on developing the requested criteria, noted the difficulties encountered in responding to resolution GC(44)/RES/15. The Secretariat was requested to continue working towards meeting the request made of it in that resolution, inviting relevant international organizations to co-operate as appropriate.[1] On 21 September 2001, the General Conference endorsed the Board's request.

3. On 9 September 2002, the Board took note of a further report (contained in document GOV/2002/35-GC(46)/11) on the status of the work being done on developing the requested criteria. In the Board's discussion, it was emphasized "that the establishment of such radiological criteria was a very sensitive issue owing to its implications for radiological protection and to the considerable impact which the criteria might have on the domestic and international trade in commodities, and that the Secretariat should proceed carefully, without undue haste and with full consideration of the views of Member States."[2] On 20 September 2002, the General Conference took note of the steps taken by the Secretariat pursuant to resolution GC(44)/RES/15.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2002 SESSION

4. The Secretariat, which received nearly 300 comments from Member States on the draft Safety Guide entitled "Radionuclide content in commodities not requiring regulation for purposes of radiation protection" that is referred to in the report contained in document GOV/2002/35-GC(46)/11, revised the draft Safety Guide in the light of those comments and submitted the revised draft Safety Guide (entitled "Radioactivity in material not requiring regulation for purposes of radiation protection") to the Radiation Safety Standards Committee (RASSC), the Waste Safety Standards Committee (WASSC) and the Transport Safety

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1 See GOV/OR.1031, paras 70 and 71.

2 See GOV/OR.1054, para. 64.

Standards Committee (TRANSSC), which recommended that it also be sent to Member States for comment. The deadline for the receipt of comments is 15 August 2003. The Secretariat will review the comments received and prepare a new draft for consideration by RASSC, WASSC and TRANSSC in October 2003. This work includes Action 4 (Develop an internationally accepted and harmonized approach for controlling the removal of materials and sites from regulatory control) of the actions in the area of radioactive waste management whose implementation is described in Annex 7 to this document.

5. As reported to the Board in September 2002 in document GOV/2002/35-GC(46)/11, the FAO/WHO Codex Alimentarius Commission (CAC) was requested to review radiological criteria for foodstuffs and WHO was consulted with regard to criteria for drinking water. Early in 2003, a sub-committee of the CAC recommended that criteria for the transboundary movement of foodstuffs be developed, and the Secretariat is participating - together with FAO and WHO - in their development.

6. WHO has prepared draft criteria for drinking water containing radioactive material. The document is currently in the final approval process.

Education and Training in Nuclear, Radiation and Transport Safety and Waste Management

NUCLEAR SAFETY

1. The Secretariat has continued to implement the strategy recommended by an Advisory Group on Education and Training in Nuclear Safety in 2001 for helping Member States to ensure sustainable education and training in nuclear safety.[1] The focus has been on the preparation of standard training material and on the training of trainers.

2. Since the General Conference's 2002 session, for participants from the Europe region a six-week basic professional training course on nuclear safety has been held in France, a training course on regulatory control at nuclear power plants has been held in Germany and a training course on safety assessment as an aid to decision-making has been held in Spain within the framework of the Agency's technical co-operation activities.

3. A further annual postgraduate course in nuclear safety (in Spanish) was held at Argentina's regional centre; the syllabus has this year been revised and brought into line with standard Agency material for training in nuclear safety.

4. Within the framework of the extrabudgetary programme on the safety of nuclear installations in South East Asian, Pacific and Far East countries, a two-year training programme on safety analysis methodology and the use of computer codes was completed in November 2002. Thirteen participants - from China, Indonesia, Malaysia, the Philippines, Thailand and Vietnam - attended four workshops hosted by the Korea Institute of Nuclear Safety, which also hosted a workshop on fire protection at research reactors.

5. In China, a workshop was held on nuclear safety inspector qualification and training for personnel of the country's regulatory body. Also, a workshop was held on self-assessment in the development and maintenance of programmes of education and training in nuclear safety, with the participation of experts from China's regulatory body, technical support organizations, nuclear power utilities and universities.

6. Standard training material on the following topics was prepared: preparedness for and response to emergencies at research reactors; regulatory aspects of and documentation relating to research reactor safety; ageing management for research reactors; basic training in Level 1 PSAs and in PSA applications; management of operational safety at nuclear power plants; and nuclear power plant safety assessment. All the material is available upon request on CD-ROM and has been posted on the Agency's nuclear safety (NUSAFE) website.

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[1] See document GOV/INF/2001/9-GC(45)/INF/6, paras 3-7.

7. Distance learning material for self-study in reactor physics, thermal hydraulics and the regulatory control of nuclear power plants was also prepared. It is available upon request on CD-ROM and has been posted on the NUSAFE website.

8. Within the framework of the extrabudgetary programme on the safety of nuclear installations in South East Asian, Pacific and Far East countries, an Internet-based Asian Nuclear Safety Network is being developed by Member States with the help of the Secretariat. Hubs have already been established in China, Japan, the Republic of Korea and the United States and within the Secretariat. A pilot project on retrieving education and training material from a master index stored in the hubs is under way, with completion expected in December 2003.

9. More information about the nuclear safety education and training events organized by the Department of Nuclear Safety and Security will be provided by the Department to Member States upon request.

RADIATION AND TRANSPORT SAFETY AND WASTE MANAGEMENT

10. In paragraph 2 of resolution GC(46)/RES/9.C, the General Conference last year urged the Secretariat to continue to implement the Strategic Plan for a long-term and sustainable programme of education and training in radiation safety and waste management (see Note by the Secretariat 2001/Note 20). The first meeting of the Steering Committee that oversees and advises on the implementation of the Strategic Plan was held in November 2002 (the 19 members of the Steering Committee represent collaborating regional and national training centres, the European Commission and the International Radiation Protection Association (IRPA)). The Steering Committee made recommendations on: performance indicators to measure implementation of the Strategic Plan; criteria for the establishment and recognition of collaborating regional and national training centres; criteria for the selection of trainers; and the philosophy and content of a train-the-trainers programme. It recognized the need for an inter-centre network to increase the effectiveness of and facilitate communications between training centres, encouraged the Secretariat to continue its efforts in the area of e-learning promotion, and reviewed the training packages developed by the Secretariat and identified necessary improvements.

11. Postgraduate educational courses (PGECs) in radiation protection and the safety of radiation sources were held at regional centres in Argentina (in Spanish), Belarus (in Russian), Malaysia (in English) and the Syrian Arab Republic (in Arabic) and - for the first time - at centres in Morocco (in French) and Greece (in English). The PGECs, based on the Secretariat's Standard Syllabus, were attended by about 120 participants. The Standard Syllabus was published (under the symbol TCS-18) in English and is currently being translated into the other five official languages of the Agency.

12. A large number of workshops and other specialized training events relating to radiation and transport safety and waste management were organized within the framework of the Model Projects on upgrading radiation protection infrastructure in Africa, East Asia and the Pacific, Europe, Latin America and West Asia and of RCA, AFRA and ARCAL. In addition,

the Secretariat supported more than ten national training courses on emergency response, radiation safety in diagnostic radiology, radioactive waste management and other subjects.

13. Training modules on the authorization and inspection of radiation sources in industrial radiography, radiation protection in diagnostic radiology, nuclear medicine and radiotherapy, emergency preparedness and 14 other subjects were submitted to the Steering Committee for review. The Secretariat is now revising the training modules in the light of the Steering Committee's comments and of feedback from regional and national training events in which the training modules were used.

14. A first workshop designed to train potential trainers in radiation protection in medical practice was held in December 2002. Further such workshops are being held in 2003.

15. Secretariat staff participated in the meetings of a European Commission working group on education and training in different areas of radiation protection. Their participation has already resulted in improved co-operation between the Secretariat and the European Commission, with a consequent reduction in duplication of effort.

16. In October 2002, a group of consultants advised on the development of interactive training packages. In the light of the group's advice, the Secretariat prepared a prototype of an e-learning infrastructure and presented it to the Steering Committee, which approved it.

17. Preparations for the establishment of an inter-centre network are in progress. It is hoped that the network will, in ensuring that training centres do not have to function in isolation, lead to higher training course quality and help to harmonize the training courses.

18. Tables showing the regional workshops and other training events held during the period August 2002-July 2003 and the training modules that have been developed by the Secretariat will be provided by the Department of Nuclear Safety and Security on request.

International Response to Nuclear and Radiological Emergencies

BACKGROUND

1. In September 2002, the General Conference, which had before it Attachment 8 to document GOV/2002/35-GC(46)/11 (in which reference was made to document GOV/2002/6 containing a report on "Encouraging Member States to strengthen their emergency response capabilities and enhancing the capabilities of the Agency's Emergency Response Centre"), requested the Secretariat, in paragraph 4 of resolution GC(46)/RES/9.D, to "seek ways of facilitating co-operation and co-ordination among Parties to the Convention on Early Notification of a Nuclear Accident (Early Notification Convention) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Assistance Convention) to … consider institutionalising" the Meeting of Representatives of National Competent Authorities identified under the Early Notification Convention and the Assistance Convention (Competent Authorities' Meeting).

2. The Second Competent Authorities' Meeting, convened by the Secretariat pursuant to resolution GC(46)/RES/9.D, took place from 2 to 6 June 2003. It was attended by 86 representatives of competent authorities from 55 Member States (49 of them Parties to the Early Notification Convention and/or the Assistance Convention) and by representatives of the World Meteorological Organization (WMO) and the Food and Agriculture Organization of the United Nations (FAO). In addition, three observers from the Nuclear Energy Agency of OECD and the European Commission (EC) attended.

3. The Meeting had the following aims: (i) to review progress made in following up on the recommendations of the First Competent Authorities' Meeting, held in June 2001; (ii) to inform competent authorities' representatives of the Agency's latest emergency response arrangements; (iii) to evaluate the effectiveness of the system for international response to nuclear and radiological emergencies (the international emergency response system); (iv) to consider how to improve the system through the identification of problems and the development of a strategy for resolving them; (v) to consider proposals for achieving long-term sustainability of the system; and (vi) to make plans for the future.

4. The Second Competent Authorities' Meeting:
   - considered a report by the Secretariat on actions taken since the June 2001 Meeting and proposals from a group of like-minded competent authorities relating to long-term sustainability of the international emergency response system and to international assistance and international communication in the event of a nuclear accident or radiological emergency;
   - agreed on a long-term goal for strengthening the international emergency response system;

- agreed on the establishment of a regionally balanced National Competent Authorities' Co-ordinating Group (NCACG) that will co-ordinate the execution of tasks assigned to competent authorities by the Second Competent Authorities' Meeting, including the establishment of groups to continue the work underway on developing strategies for improving emergency assistance and emergency communication;
- selected the NCACG chairman and members;
- adopted a proposal for enhancing the existing emergency drill and exercise regime; and
- recommended to the Agency's Secretariat that it
    - convene the Competent Authorities' Meeting regularly and
    - convene a technical committee to facilitate participation in the Emergency Response Network (ERNET).

The full report on the Second Competent Authorities' Meeting is available at http://www-rasanet.iaea.org/downloads/meetings/caenac2003.pdf

SECRETARIAT INTENTIONS

5. The Secretariat intends to respond to the request made of it in paragraph 4 of resolution GC(46)/RES/9.D by following up on the recommendations of the Second Competent Authorities' Meeting, by facilitating the NCACG's work and by developing - with the NCACG - a plan of action for enhancing the international emergency response system.

6. The Secretariat also intends to identify the human and financial resources needed in order to support the implementation of Meeting recommendations and of the plan of action, to optimize the use of existing resources and, where necessary, to request additional extra-budgetary resources from Member States.

The Safety Standards Programme

DEVELOPMENT OF STRATEGY

1. In Note by the Secretariat 2003/Note 4, the Board was informed of the decision by the Commission on Safety Standards to design a strategy for further development of the safety standards and their global acceptance. A strategy document was adopted by the Commission at its meeting in November 2002. A summary strategy paper was sent to the Director General and was presented to the Board as Annex II to 2003/Note 4. The strategy paper includes a vision for the future of the safety standards as a global reference point for safety, the worldwide use of which will provide for consistently high level of protection for people and the environment.

OVERALL STRUCTURE OF THE SAFETY STANDARDS

2. Pursuant to this strategy, the Commission approved, at its meeting in June 2003, the plan of an overall structure for the safety standards. This structure indicates the safety standards existing, in preparation or to be prepared in the three categories of the Safety Standards Series: Safety Fundamentals, Safety Requirements and Safety Guides. The structure envisages:

(a) a single Safety Fundamentals publication (currently in preparation) summarizing the purpose of the Agency's safety standards and the basic safety objectives and principles common to nuclear, radiation, radioactive waste and transport safety. (This publication would replace the three existing Safety Fundamentals publications[1].);

(b) a suite of Safety Requirements covering all relevant areas of safety through an appropriate combination of thematic and facility/activity related publications; and

(c) one or more Safety Guide(s) supporting each Safety Requirements publication.

3. The overall structure agreed by the Commission is summarized in Attachment 1. For simplicity, this summary shows Safety Fundamentals and Safety Requirements, but does not list the supporting Safety Guides.

ACTION PLAN

4. The Commission is developing an action plan defining the steps necessary to reach a set of safety standards in accordance with the overall structure and to promote their worldwide application.

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[1] *The Safety of Nuclear Installations* was approved by the Board in June 1993 and subsequently issued by the Agency as Safety Series No. 110; *The Principles of Radioactive Waste Management* was approved by the Board in September 1994 and subsequently issued as Safety Series No. 111-F; and *Radiation Protection and the Safety of Radiation Sources* was approved by the Board in June 1995 and subsequently issued as Safety Series No. 120.

OVERVIEW OF THE SAFETY STANDARDS

5. The Commission has also approved a statement explaining the underlying basis for and intent of the Agency's safety standards. This statement is reproduced in Attachment 2 and may also be used as the basis for an introductory section to the new Safety Fundamentals. The statement has also been put in the form of a short leaflet, intended for wide distribution to promote the safety standards, and has been made available on the IAEA website

http://www.iaea.org/ns/CoordiNet/

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Overall Structure of the Safety Standards

1. At its meeting in June 2003, the Commission on Safety Standards agreed an overall structure for the safety standards. This structure indicates the safety standards existing, in preparation or to be prepared in the Safety Standards Series. The overall structure agreed by the Commission is summarized below.

2. This summary shows publications in the Safety Fundamentals and Safety Requirements categories. Each Safety Requirements publication will be supported by one or more Safety Guide(s); however, for simplicity, these Safety Guides are not listed here.

3. In each grouping below:

   (a) current standards (if any) are shown in normal text, the number in the left margin indicating the publication's number in the Safety Series (for standards published in 1996 or earlier) or the Safety Standards Series (for standards published since 1997);

   (b) draft standards currently in preparation are shown in italics with a 'DS' number in the left margin (this being an internal reference number, which will not appear in the published standard); and

   (c) planned standards are shown in italics with 'NEW' in the left margin.

SAFETY FUNDAMENTALS

110	The safety of nuclear installations (1993)
111-F	The principles of radioactive waste management (1993)
120	Radiation protection and the safety of radiation sources (1996)
DS298	*Fundamentals of nuclear, radiation, radioactive waste and transport safety (to combine and supersede 110, 111-F and 120)*

THEMATIC SAFETY REQUIREMENTS

GS-R-1	Legal and governmental infrastructure for nuclear, radiation, radioactive waste and transport safety (2000)
GS-R-2	Preparedness and response for a nuclear or radiological emergency (2002) Co-sponsorship: FAO, OCHA, OECD/NEA, ILO, PAHO, WHO.
50-C/SG-Q	Quality assurance for safety in nuclear power plants and other nuclear installations, Code and Safety Guides Q1-Q14 (1996)
DS338	*Management systems for the safety of nuclear facilities and activities involving the use of ionizing radiation (to supersede 50-C/Q, Code)*
NEW	*Safety assessment and verification for nuclear and radiation related facilities and activities*
50-C-S (Rev. 1)	Code on the safety of nuclear power plants: Siting (Rev. 1, 1988)

DS305	*Site evaluation for nuclear installations (to supersede 50-C-S Rev. 1)*
115	International basic safety standards for protection against ionizing radiation and for the safety of radiation sources (1996). Co-sponsorship: FAO, ILO, OECD/NEA, PAHO, WHO
WS-R-2	Predisposal management of radioactive waste, including decommissioning (2000)
NEW	*Radioactive waste management (To supersede the predisposal part of WS-R-2)*
NEW	*Decommissioning of nuclear and radiation related facilities (to supersede the decommissioning part of WS-R-2)*
DS162	*Remediation of areas contaminated by past activities and accidents*

FACILITY AND ACTIVITY SPECIFIC SAFETY REQUIREMENTS

NS-R-1	Safety of nuclear power plants: Design (2000)
NS-R-2	Safety of nuclear power plants: Operation (2000)
35-S1	Code on the safety of nuclear research reactors: Design (1992)
35-S2	Code on the safety of nuclear research reactors: Operation (1992)
DS272	*Safety of research reactors (to combine and supersede 35-S1 and 35-S2)*
DS316	*Fuel cycle facilities*
NEW	*Radiation Related Facilities and Activities*
WS-R-1	Near Surface Disposal of Radioactive Waste (1999)
DS154	*Geological disposal of radioactive waste*
NEW	*Disposal of radioactive waste (to combine and supersede WS-R-1 and DS154)*
TS-R-1	Regulations for the safe transport of radioactive material (2000)

IAEA Safety Standards

The Global Reference for Protecting People and the Environment

SAFETY THROUGH INTERNATIONAL STANDARDS

1. While safety is a national responsibility, international standards and approaches to safety promote consistency and facilitate international technical co-operation and trade, and help to provide assurance that nuclear and radiation related technologies are used safely. The standards also provide support for States in meeting their international obligations.

2. One general international obligation is that a State must not pursue activities that cause damage in another State. More specific obligations on Contracting States are set out in international safety related conventions. The internationally agreed IAEA safety standards provide the basis for States to demonstrate that they are meeting these obligations.

THE IAEA STANDARDS

3. The IAEA safety standards are founded in the IAEA's Statute, which authorizes the Agency to establish standards of safety for nuclear and radiation related facilities and activities and to provide for their application.

4. The safety standards reflect an international consensus on what constitutes a high level of safety for protecting people and the environment.

5. They are issued in the IAEA Safety Standards Series, which has three categories:

- **Safety Fundamentals** These present the objectives, concepts and principles of protection and safety and provide the basis for the safety requirements.

- **Safety Requirements** These establish the requirements that must be met to ensure the protection of people and the environment, both now and in the future. The requirements, which are expressed as 'shall' statements, are governed by the objectives, concepts and principles of the Safety Fundamentals: if they are not met, measures must be taken to reach or restore the required safety level. The Safety Requirements use regulatory language, which enables them to be incorporated into national laws and regulations.

- **Safety Guides** These provide recommendations and guidance on how to comply with the Safety Requirements. Recommendations in the Safety Guides are expressed as 'should' statements. It is necessary to take the measures recommended or equivalent alternative measures. The Safety Guides represent good practices and increasingly they reflect best practices to help users striving to achieve high levels of safety. Each Safety Requirements publication is supplemented by a number of Safety Guides which can be used in developing national regulatory guides.

6. The IAEA safety standards need to be complemented by industry standards, and must be implemented within appropriate national regulatory infrastructures to be fully effective. The IAEA produces a wide range of supporting technical publications that may help States in developing these national standards and infrastructures.

MAIN USERS OF THE STANDARDS

7. Safety standards are intended for regulatory bodies and governmental agencies as well as organizations that design and use nuclear and radiation related technologies, and users of radioactive materials in industry, medicine, agriculture, research and education.

THE DEVELOPMENT PROCESS

8. The preparation and review of safety standards involves the IAEA Secretariat and four safety standards committees for safety in the areas of nuclear safety (NUSSC), radiation safety (RASSC), the safety of radioactive waste (WASSC) and the safe transport of radioactive material (TRANSSC), and a Commission on Safety Standards (CSS) which oversees the entire safety standards programme. Their membership includes senior government officials having responsibility for establishing national standards. All IAEA Member States can nominate experts for the standards committees and provide comments on draft standards.

9. For Safety Fundamentals and Safety Requirements, the draft endorsed by the Commission is submitted to the IAEA Board of Governors for approval for publication. Safety Guides are published on the approval of the Director General.

10. Through this process the standards come to represent a consensus view of the IAEA's Member States. The findings of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR) and the recommendations of international expert bodies, notably the International Commission on Radiological Protection (ICRP), are taken into account in developing the standards.

11. Some standards are developed in co-operation with other bodies in the United Nations system or other specialized agencies, including the Food and Agriculture Organization of the United Nations, the International Labour Organization, the OECD Nuclear Energy Agency, the Pan American Health Organization and the World Health Organization.

12. The safety standards are kept up to date: five years after publication they are reviewed to determine whether revision is necessary.

APPLICATION AND SCOPE OF THE STANDARDS

13. The IAEA Statute makes the safety standards binding on the IAEA in relation to its own operations and on States in relation to operations assisted by the IAEA. Any State wishing to enter into an agreement with the IAEA concerning any form of Agency assistance is required to comply with the requirements of the safety standards that pertain to the activities covered by the agreement.

14. International conventions also contain similar requirements to those in the safety standards, and make them binding on Contracting States. The Safety Fundamentals were used as the basis for the development of the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. The Safety Requirements on Preparedness and Response for a Nuclear or Radiological Emergency reflect the obligations on States under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

15. The safety standards, incorporated into national legislation and regulations and supplemented by international conventions and detailed national requirements, establish a basis for protecting people and the environment. However, there would also be special aspects of safety that need to be assessed case by case at the national level. For example, many of the safety standards, particularly those addressing planning or design aspects of safety, are intended to apply primarily to new facilities and activities. The requirements and recommendations specified in the IAEA safety standards might not be fully met at some facilities built to earlier standards. How the safety standards are to be applied to such facilities is a decision for individual States.

FURTHER INFORMATION

16. The IAEA web site at www.iaea.org/ns/CoordiNet/ provides the English language texts of published and draft safety standards, a status list for safety standards both current and under development, and the IAEA Safety Glossary. The full texts of some published safety standards in other languages (namely Arabic, Chinese, French, Russian and Spanish) can also be found at this site.

17. For additional information, please contact the Safety Co-ordination Section in the Department of Nuclear Safety and Security. The IAEA web site also provides the names of the members of the Commission and Committees, who may be contacted as national sources of information on the IAEA safety standards.

The Safety of Research Reactors

BACKGROUND

1. In September 2001, in resolution GC(45)/RES/10.A, the General Conference endorsed a decision of the Board and requested that, in conjunction with Member States, the Secretariat develop and implement a safety enhancement plan for research reactors worldwide. One of the key elements of this plan concerned the gathering of information on research reactors by means of an industry-wide survey. While the survey has been distributed worldwide, to date responses have been received from only about half of the Member States with research reactors, and the associated database is incomplete. It was also specified that the safety enhancement plan would include, inter alia, the preparation of a Code of Conduct for the Safety of Research Reactors. A first draft of a Code of Conduct was produced at an Open-ended Meeting of Legal and Technical Experts in May 2002.

DEVELOPMENTS SINCE THE 46TH GENERAL CONFERENCE

2. In December 2002 a second Open-ended Meeting was held. At its conclusion, the decision of the group was that the draft Code, together with the report of the Chairman of the meeting, should be transmitted to the Director General. Included in the transmittal was the recommendation that the Code of Conduct be submitted to the Board of Governors for its consideration.

3. The draft Code of Conduct was distributed to the members of the Board for consideration at its March 2003 meeting. In view of the concerns expressed by some Member States to the Secretariat it was evident that additional time was needed for the proper review and consideration of the draft Code. The Board directed that the Secretariat consider the concerns of the various Member States and revise and, when appropriate, resubmit the Code of Conduct for consideration.

4. In response to the Board's direction, the draft Code of Conduct has been sent to all Member States for consideration and comment. In view of the importance of the Code of Conduct, the review period was set to continue until 1 September 2003. Consideration is now being given to the comments that have been received.

5. Each Member State will receive a summary of the resolution of their particular comments. An Expert Working Group (with limited participation) will be convened in October 2003 to help the Secretariat in resolving the individual points of concern. A final distribution of the revised draft Code to Member States will be made in November 2003; 30 days will be given for the submission of comments. The final version of the draft Code will then be resubmitted for consideration at the March 2004 Board of Governors' meeting.

The Safety of Radioactive Waste Management

1. On 10 September 2001, the Board requested the Secretariat to implement a list of seven actions proposed in the *Report on the Safety of Radioactive Waste Management* contained in Attachment 1 to document GOV/2001/31-GC(45)/14, subject to the availability of resources, and to inform it, as appropriate, of their implementation. On 21 September 2001, in resolution GC(45)/RES/10.A, the General Conference endorsed the Board's request. Progress in implementing the actions was described in Attachment 5 to document GOV/2002/35-GC(46)/11, which was before the General Conference at its 2002 session.

DEVELOPMENTS SINCE THE GENERAL CONFERENCE'S 2002 SESSION

2. The International Conference on Issues and Trends in Radioactive Waste Management, organized by the Agency in co-operation with the European Commission and OECD/NEA, took place in Vienna from 9 to 12 December 2002. The aforementioned list of actions has been updated in the light of the deliberations of the Conference, with the help of experts from several of the Member States that were represented at the Conference.[1]

3. Before describing how the list of actions has been updated, the Secretariat gives below a brief account of the work done in implementing the seven original actions.

Action 1: Develop a common framework for the disposal of different types of radioactive waste.

4. A document has been prepared setting out proposals for a common framework and its application. During 2002, comments were received on the document from the Subgroup on Principles and Criteria of the Waste Safety Standards Committee (WASSC). A particular issue raised was the optimum approach for the disposal of non-heat-generating long-lived radioactive waste, and a questionnaire requesting information on national approaches being adopted for the management of this waste type has been sent to the members of WASSC. A revised version of the document was examined in June 2003 by a technical committee, and as a result a technical document will be issued in due course to promote wider international discussion on the subject.

Action 2: Assess the safety implications of the extended storage of radioactive waste and of any future reconditioning which may be necessary.

5. A position paper prepared by international experts and entitled "The long-term storage of radioactive waste: safety and sustainability" has just been published by the Agency. The document, which reviews the ethical and philosophical issues surrounding the extended storage of radioactive waste, is intended as an international reference point for discussions on

[1] The Conference proceedings are being prepared by the Agency for publication. A report on the Conference has been posted on http://www-rasanet.iaea.org/downloads/meetings/waste-trends02.pdf

the subject and as an aid to Member States in taking decisions on the long-term management of radioactive waste.

6. A detailed examination of the long-term safety provided by the surface storage of radioactive waste is under way as part of a project on the application of safety assessment techniques in examining the safety of waste management facilities other than disposal facilities.

Action 3: Promptly develop safety standards for geological disposal addressing, inter alia, issues of human intrusion, institutional control, retrievability and the content of the safety case.

7. A draft safety requirements document on geological disposal is in preparation. In view of its importance and of the need to obtain the fullest possible international consensus on its contents, OECD/NEA has been invited to co-sponsor the document. During 2002, a draft of the document was reviewed by WASSC and its Subgroup on Principles and Criteria and by relevant committees of OECD/NEA. The latest draft of the document is currently being reviewed by Member States. Work has started on a supporting safety guide which will elaborate on the safety considerations involved in waste repository site investigation, characterization and selection, facility design and development, and facility operation and closure.

Action 4: Develop an internationally accepted and harmonized approach for controlling the removal of materials and sites from regulatory control.

8. This action is part of the current work on the development of radiological criteria for long-lived radionuclides in commodities (see Annex 2 to this document) in the course of which a draft safety guide entitled "Radioactivity in material not requiring regulation for the purposes of radiation protection" and a supporting safety report are being prepared.

Action 5: Develop a structured and systematic programme to ensure adequate application of the Agency's waste safety standards.

9. The existing approaches for evaluating the use made and the effectiveness of the waste safety standards are being analysed with the intention of improving the arrangements for providing safety-related assistance, peer review services and education and training. A comprehensive syllabus for training in radioactive waste management has been drawn up and standardized training packages are being created. A worldwide programme of training events is in place, with the current emphasis on safety assessment and decommissioning.

Action 6: Explore ways to ensure that information, knowledge and skills concerning radioactive waste management are made available to future generations.

10. A draft document has been prepared on the use of archiving as a means of preserving knowledge about radioactive waste disposal facilities for future generations. The proposals in the document are currently being tested in relation to the recording of the results of a safety assessment at a near-surface repository. Progress in implementing this action has been slower than hoped, owing to the fact that only limited resources have been available for implementation.

Action 7: Develop a step-by-step programme of work aimed at addressing the broader social dimensions of radioactive waste management, including an appropriate mechanism to advise on such a programme and assess its suitability and progress.

11. This action has been addressed at several meetings over the past two years. For example, earlier this year a meeting was held for the purpose of eliciting the views of concerned persons (stakeholders) about the way in which the Agency's radioactive waste safety standards are developed and the content of those standards and in December 2002, at the International Conference on Issues and Trends in Radioactive Waste Management, there were sessions on the involvement of concerned persons in and public attitudes towards radioactive waste management, with a variety of concerned persons participating.

12. At these various meetings there have been discussions aimed at helping to determine more clearly the role of the Agency with regard to the social dimensions of radioactive waste management. While there is support for the Agency's involving concerned persons to a greater degree in Agency activities related to radioactive waste management and for the Agency's role in disseminating relevant information, most Member States do not wish to see the Agency involving itself more directly in matters related to the social dimensions of radioactive waste management.

UPDATING OF THE 2001 ACTION PLAN

13. The following proposed modifications to the original action plan result from the deliberations of the International Conference on Issues and Trends in Radioactive Waste Management.

14. The need for an internationally recommended approach to the management of large volumes of radioactive waste containing long-lived naturally occurring radionuclides was emphasized at the International Conference on the Management of Radioactive Waste from Non-Power Applications held in Malta in 2001 and at the International Conference on Issues and Trends in Radioactive Waste Management. Such an approach should be consistent with the already established approaches to managing other types of radioactive waste. In particular, radioactive waste containing long-lived naturally occurring radionuclides should be included within an international radioactive waste classification scheme, with solutions recommended for its disposal. However, circumstances vary from country to country, so that, notwithstanding the need for consistency of approach, national regulators should be able to implement approaches flexibly on a case-by-case basis.

15. Accordingly, original Action 1 has been modified to read as follows:

Action 1* Develop a common framework for the management and disposal of different types of radioactive waste, paying particular attention to large volumes of waste containing long-lived naturally occurring radionuclides.

16. At the International Conference on Issues and Trends in Radioactive Waste Management, the discussion on the long-term safety of storage of radioactive waste initiated in 2000 at the Córdoba Conference on the Safety of Radioactive Waste Management was continued, and similar conclusions were reached. In addition, however, it was proposed that safety standards be developed to cover the long-term storage of radioactive waste.

17. Accordingly, original Action 2 has been modified as follows:

Action 2* Assess the safety implications of the extended storage of radioactive waste and of any future reconditioning which may be necessary and develop safety standards for the long-term storage of radioactive waste.

18. The International Conference on Issues and Trends in Radioactive Waste Management drew attention to the importance of determining the implications of nuclear safeguards requirements for the design of geological repositories.

19. Accordingly, original Action 3 has been modified as follows:

Action 3* Promptly develop safety standards for geological disposal, addressing – inter alia – issues of human intrusion, institutional control, retrievability, the content of the safety case and any implications of nuclear safeguards requirements for the design of the repositories.

20. Original Action 4 has not been modified.

21. The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (the Joint Convention) is now in force and, together with the international safety standards on radioactive waste management, it forms the basis of a "global safety framework". In this context, the International Conference encouraged the Agency to continue to improve its safety standards and the mechanisms for their application.

22. Accordingly, original Action 5 has been modified as follows:

Action 5* Develop a structured and systematic programme to ensure adequate application of the Agency's waste safety standards and facilitate their application in implementation of the Joint Convention.

23. Original Action 6 has not been modified.

24. The discussion on societal aspects of radioactive waste management (public attitudes and stakeholder involvement) was an important element of the International Conference, but the potential role of the Agency remains very limited.

25. Accordingly, original Action 7 has been modified as follows:

Action 7* Address the broader societal dimensions of radioactive waste management by:

- **disseminating information, in appropriate formats and by appropriate means (including the Internet), on the main issues related to radioactive waste management,**
- **disseminating information on lessons learned from national experiences of stakeholder involvement in decision-making,**
- **involving concerned persons in relevant Agency activities, especially those related to the Agency's safety standards, and**
- **ensuring that the societal aspects of radioactive waste management are adequately covered at relevant conferences and other meetings organized by the Agency.**

NEW ACTIONS

26. The International Conference was made aware of some important current developments concerned with the control of radioactive discharges to the environment. In Europe there is pressure, through the OSPAR Convention[2], on States to reduce such discharges so that the environmental concentrations of artificial radionuclides become close to zero. At the same time, new international developments related to the protection of the environment from the effects of ionizing radiation may be expected to have an impact on discharge control policies (a topic that will be considered at the Agency's International Conference on the Protection of the Environment from the Effects of Ionizing Radiation due to be held in Stockholm in October 2003).

Action 8: Review the new developments related to policies for the control of radioactive discharges to the environment, taking into account the availability and cost-effectiveness of discharge reduction technologies and the broader implications for radioactive waste management of reducing discharges.

27. The management of spent long-lived sealed radioactive sources is a problem confronting almost all countries, and the importance of the problem has been heightened by security concerns. The International Conference discussed the various possible approaches for managing such sources and recognized that they all have major international elements.

Action 9: Explore international mechanisms for facilitating the management of spent sealed radioactive sources through:

- **the return of such sources to their suppliers,**
- **the development of regional repositories for the disposal of such sources, and**
- **studies on the feasibility and safety of the borehole disposal concept.**

28. The first element of this action, concerned with the return of sources to their suppliers, is being implemented as part of the Revised Action Plan for the Safety and Security of Radiation Sources (GOV/2001/29-GC(45)/12), which is currently being updated.

[2] The Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention) entered into force in 1998 as the successor to the Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft and the Paris Convention for the Prevention of Marine Pollution from Land-Based Sources. The Contracting Parties are Belgium, Denmark, the European Commission, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The Safe Decommissioning of Nuclear Activities

1. Decommissioning, i.e. the administrative and technical actions taken to allow the removal of some or all of the regulatory controls from a nuclear facility, is becoming an increasingly important issue for many Member States as more and more nuclear facilities reach the end of their useful lives. In this context, nuclear facilities needing decommissioning range from nuclear power plants and complex reprocessing plants to small research and medical facilities using radiation sources. The safety and technological considerations before, during and after decommissioning are different from those in the earlier phases of the development and operation of nuclear facilities, and special consideration therefore, needs to be given to them. For this reason, the safe decommissioning is now an important element in the Agency's programme.

2. The International Conference on Safe Decommissioning for Nuclear Activities: Assuring the Safe Termination of Practices involving Radioactive Materials took place in Berlin from 14 to 18 October 2002. It was hosted by the Government of Germany and presided over by Mr. W. Renneberg (Germany). It was attended by 224 participants from 37 Member States and three international organizations. The objective of the Conference was to foster the exchange of information on the safe and orderly termination of practices that involve the use of radioactive substances and also to promote greater international coherence on strategies and criteria for the safe termination of practices.

3. The Conference President's summary report drew attention to the need for international action to facilitate and resolve several important issues related to safe decommissioning. The Conference President's summary findings have been posted on

http://www-rasanet.iaea.org/downloads/meetings/decom02.pdf

The Secretariat, with the assistance of senior experts from countries represented at the Conference, is in the process of preparing a draft action plan which elaborates on the ideas contained in the Conference President's report. When this process is complete, the resulting text will be submitted to the members of the Agency's Technical Group on Decommissioning (TEGDE) for review.[1]

4. It is expected that a draft Action Plan for the Safe Decommissioning of Nuclear Activities will be submitted to the March 2004 meetings of the Board of Governors for approval.

[1] TEGDE is a standing advisory body established by the Director General in 2002 "to provide technical guidance to the Agency on its programmatic activities in the area of decommissioning and to assist and provide guidance to the Agency in the development of harmonized policies and strategies for decommissioning".

The Radiological Protection of Patients

BACKGROUND

1. In September 2002, in paragraph 16 of resolution GC(46)/RES/9.A, the General Conference endorsed the decision of the Board of Governors to approve the International Action Plan for the Radiological Protection of Patients contained in the Attachment to document GOV/2002/36-GC(46)/12 and requested the Secretariat to implement it, subject to the availability of resources. With the resources available to it, the Secretariat is implementing more than half of the actions constituting the Action Plan.

PROGRESS MADE IN IMPLEMENTING THE ACTION PLAN

Actions common to diagnostic and interventional radiology, nuclear medicine and radiotherapy

Education and training

Action: *to complete the development of a standard syllabus and packages for training in the application of safety standards.*
Action: *to train the trainers involved in national training programmes using the above-mentioned packages.*

2. Standard syllabuses and packages for training in the application of safety standards in medicine have been developed and tested. In the light of feedback from a number of training courses and a workshop and from the World Health Organization (WHO), the Pan American Health Organization and the relevant international professional bodies, they are now being revised. The revised versions will be published in the Agency's six official languages.

3. One train-the-trainers event was held - for the Europe region - in 2002, and preparations started for two further such events - one interregional and one for the Latin America region.

Action: *to arrange for a review of the syllabus for the Agency training courses in medical radiation physics by appropriate professional bodies and to publish the results.*

4. The syllabus, entitled "Review of Radiation Oncology Physics: A Handbook for Teachers and Students", has been published as a working document (in May 2003), and the electronic version is available from the web page of the Division of Human Health. Endorsement of the syllabus was requested from the relevant international organizations and professional societies.

Information exchange

Action: *to collect and disseminate, using the Agency's International Reporting System for Unusual Radiation Events (RADEV), information about accidental medical exposures, including, as far as possible, information about events that did not have clinical consequences but from which prevention-relevant lessons can be drawn.*

5. Information about accidental exposures in radiotherapy has been collected and collated, and a draft package for the dissemination of this information has been prepared. The package has been used at a regional workshop held in Latin America, (it will also be demonstrated at a workshop for African Member States planned for 2003). The Secretariat has requested professional societies to provide information about events that have not had clinical consequences but from which prevention-relevant lessons can be drawn.

Assistance

Action: *to support Member States in the gradual transition from the basic to advanced stages of implementation of the BSS.*

6. The Secretariat has developed a modular, step-by-step approach to technical assistance in the area of radiation protection in radiology and has organized some pilot missions based on this approach. The approach was recently incorporated into the Model Project for upgrading radiation protection infrastructure in Latin America.

Action: *to continue current activities in radiotherapy concerned with the traceability of dose measurements and with audit services, including the development of local expertise, and to extend these services to diagnostic radiology and nuclear medicine.*

7. The Secretariat has continued providing hospitals and Secondary Standards Dosimetry Laboratories (SSDLs) in Member States with calibration and audit services relating to external radiotherapy, brachytherapy, mammography and radiation protection. It is currently developing dosimetry standards for the use of diagnostic radiology beams. A code of practice for dosimetry in diagnostic radiology has been drafted. In the field of nuclear medicine, the possibility of providing audit services for SSDLs is being explored.

Guidance

Action: *to finalize the existing draft practice-specific guidance documents, seeking input from professional bodies, international organizations and national authorities responsible for the radiological protection and medical care of patients.*

8. Three practice-specific guidance documents on implementation of the BSS in radiology, nuclear medicine and radiotherapy have been finalized - with input from professional bodies, international organizations and national authorities responsible for the radiological protection and medical care of patients.

Actions in diagnostic and interventional radiology

Education and training

Action: *to provide for the training of radiographers and radiologists in the optimum management of doses in conventional radiology.*

9. Five training courses were held in 2002. Before and after each course, an assessment was made of the trainees' understanding of radiation protection-related issues, in order to determine whether there had been an improvement and how useful the training packages had been.

Appraisals and other services

Action: *to develop a methodology for establishing local guidance (reference) levels for diagnostic radiology, through simple surveys taking into account image quality, to disseminate the methodology, to promote programmes for assessing it and, during the assessments, to help countries with the conduct of quality control tests involving the use of phantoms and patient dose measurements.*

10. The methodology that has been developed is being applied in ARCAL and other technical co-operation activities.

Co-ordinated research

Action: *to co-ordinate research work on exploring the feasibility of establishing guidance (reference) levels for complex procedures in diagnostic and interventional radiology.*

11. A co-ordinated research project on the feasibility of establishing guidance (reference) levels for complex procedures such as interventional radiology was launched, and the initial results will be reviewed in October 2003.

Actions in nuclear medicine

Action: *to promote in developing countries - through training and the dissemination of information - the use of existing standards, guidelines, protocols and Quality Assurance (QA) procedures in both diagnostic and therapeutic applications, including radiopharmacy.*

12. A nuclear medicine manual to promote the use of standards and QA procedures is near finalization. In addition, lectures are being given on the use of existing standards, guidelines, protocols and QA procedures.

Action: *to complete the task of developing a technical document on the quality control of Positron Emission Tomography (PET) systems.*

13. The work on a technical document on the quality control of PET systems is still under way.

Actions in radiotherapy

Information exchange

Action: *to maintain the Directory of Radiotherapy Centres (DIRAC).*

14. The Directory of Radiotherapy Centres (DIRAC), an Agency-WHO database which contains information relating to - inter alia - teletherapy machines, brachytherapy sources and devices, dosimetry equipment, treatment planning systems and staffing, is verified and updated regularly and is available for internal use by the Secretariats of the Agency and WHO. An Internet version is in preparation.

Assistance

Action: *to follow up on abnormal results of the postal dose quality checks and assist in the establishment of national and regional dosimetry programmes.*

15. The Secretariat has followed up on such abnormal results with the help of local experts and, when necessary, of external experts specially recruited by it. It has published guidelines for the preparation of a manual for checking dosimetry quality in radiotherapy. It has helped several Member States to establish thermo-luminescent dosimetry (TLD) quality audit programmes and, wherever possible, is establishing links between those programmes and the Agency's Dosimetry Laboratory.

Guidance

Action: *to continue to develop and disseminate codes of practice for dosimetry.*

16. The Secretariat has developed an International Code of Practice for Dosimetry Based on Standards of Absorbed Dose to Water (Technical Reports Series No. 398). To provide practical guidance on its implementation at hospitals, it is now preparing a technical document (IAEA-TECDOC) on the testing of the procedures recommended for using different types of radiation beam and ionization chamber and comparing the results obtained with the existing protocols. It has organized a regional workshop, in Africa, on practical aspects of implementing the Code of Practice at hospitals and SSDLs and is planning similar workshops for other regions.

Action: *to develop guidance on commissioning equipment and accessories involved in simulation and treatment, including treatment planning systems, and on QA of the whole radiotherapy process.*

17. The Secretariat is preparing an IAEA-TECDOC on the commissioning and quality assurance of computerized radiation treatment planning systems. In addition, IAEA-TECDOC 1040 (entitled "Design and implementation of a radiotherapy programme: Clinical, medical physics, radiation protection and safety aspects" and published in 1998) is being revised, its scope being extended to include linear accelerators and brachytherapy.

STEERING COMMITTEE ON THE INTERNATIONAL ACTION PLAN FOR THE RADIOLOGICAL PROTECTION OF PATIENTS

18. The Action Plan contains actions covering a large number of fields (conventional and digital radiology, computed tomography, interventional procedures, nuclear medicine and radiotherapy) and of activity types (education and training, information exchange, guidance and support to Member States and research). A group of senior experts in various fields - the Steering Committee on the International Action Plan for the Radiological Protection of Patients - has been established for the purpose of keeping the various activities under review, maximizing synergy and minimizing duplication.

19. The Government of Spain has offered to host the first meeting of the Steering Committee, which is due to be held at the beginning of 2004, in Madrid.